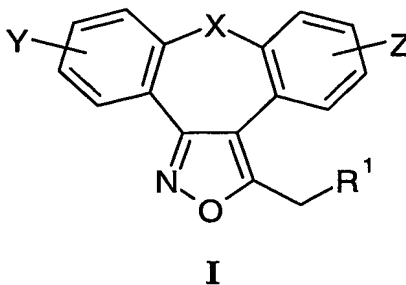


## CLAIMS

1. A compound of formula I:



wherein

X means CH<sub>2</sub> or a heteroatom selected from the group consisting of O, S, S(=O), S(=O)<sub>2</sub> and NR<sup>a</sup>, wherein R<sup>a</sup> is hydrogen or a substituent selected from the group consisting of C<sub>1</sub>-C<sub>3</sub>-alkyl, C<sub>1</sub>-C<sub>3</sub>-alkanoyl, C<sub>1</sub>-C<sub>7</sub>-alkoxycarbonyl, C<sub>7</sub>-C<sub>10</sub>-arylalkyloxycarbonyl, C<sub>7</sub>-C<sub>10</sub>-aroyl, C<sub>7</sub>-C<sub>10</sub>-arylalkyl, C<sub>3</sub>-C<sub>7</sub>-alkylsilyl and C<sub>5</sub>-C<sub>10</sub>-alkylsilylalkyloxyalkyl;

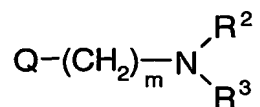
Y and Z independently from each other mean one or more identical or different substituents linked to any available carbon atom selected from the group consisting of hydrogen, halogen, C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>2</sub>-C<sub>4</sub>-alkenyl, C<sub>2</sub>-C<sub>4</sub>-alkinyl, halo-C<sub>1</sub>-C<sub>4</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>4</sub>-alkoxy, trifluoromethoxy, C<sub>1</sub>-C<sub>4</sub>-alkanoyl, amino, amino-C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-alkylamino, N-(C<sub>1</sub>-C<sub>4</sub>-alkyl)amino, N,N-di(C<sub>1</sub>-C<sub>4</sub>-alkyl)amino, thiol, C<sub>1</sub>-C<sub>4</sub>-alkylthio, sulfonyl, C<sub>1</sub>-C<sub>4</sub>-alkylsulfonyl, sulfinyl, C<sub>1</sub>-C<sub>4</sub>-alkylsulfinyl, carboxy, C<sub>1</sub>-C<sub>4</sub>-alkoxycarbonyl, cyano and nitro;

R<sup>1</sup> means hydrogen, halogen, optionally substituted C<sub>1</sub>-C<sub>7</sub>-alkyl optionally substituted with one, two, three or more substituents selected from the group consisting of halogen atom, hydroxy, C<sub>1</sub>-C<sub>4</sub> alkoxy, thiol, C<sub>1</sub>-C<sub>4</sub> alkylthio, amino, N-(C<sub>1</sub>-C<sub>4</sub>) alkylamino, N,N-di(C<sub>1</sub>-C<sub>4</sub>-alkyl)-amino, sulfonyl, C<sub>1</sub>-C<sub>4</sub> alkylsulfonyl, sulfinyl and C<sub>1</sub>-C<sub>4</sub> alkylsulfinyl; C<sub>2</sub>-C<sub>7</sub>-alkenyl optionally

substituted with one, two, three or more halogen atoms; C<sub>2</sub>-C<sub>7</sub>-alkynyl; monocyclic or bicyclic aryl group having from 6 to 10 carbon atoms and altering double bond and said group can be optionally substituted with one or two substituents selected from the group consisting of fluoro, chloro, C<sub>1</sub>-C<sub>4</sub> alkyl, cyano, nitro, hydroxy, C<sub>1</sub>-C<sub>4</sub> alkoxy, thiol, C<sub>1</sub>-C<sub>4</sub> alkylthio, amino, *N*-(C<sub>1</sub>-C<sub>4</sub>) alkylamino, *N,N*-di(C<sub>1</sub>-C<sub>4</sub>-alkyl)-amino, sulfonyl, C<sub>1</sub>-C<sub>4</sub> alkylsulfonyl, sulfinyl, C<sub>1</sub>-C<sub>4</sub> alkylsulfinyl and can be linked to the rest of the molecule by any available carbon atom via direct bond or via C<sub>1</sub>-C<sub>4</sub> alkylene group; monocyclic or bicyclic heteroaryl having the meaning of aromatic and partially aromatic groups of a monocyclic or bicyclic ring with 4 to 12 carbon atoms and at least one of them being heteroatom selected from the group consisting of O, S and N wherein available carbon or nitrogen represent the binding site of the group to the rest of the molecule either via direct bond or via C<sub>1</sub>-C<sub>4</sub> alkylene group and where said heteroaryl can be optionally substituted with fluoro, chloro, C<sub>1</sub>-C<sub>4</sub> alkyl, cyano, nitro, hydroxy, C<sub>1</sub>-C<sub>4</sub> alkoxy, thiol, C<sub>1</sub>-C<sub>4</sub> alkylthio, amino, *N*-(C<sub>1</sub>-C<sub>4</sub>) alkylamino, *N,N*-di(C<sub>1</sub>-C<sub>4</sub>-alkyl)-amino, sulfonyl, C<sub>1</sub>-C<sub>4</sub> alkylsulfonyl, sulfinyl, C<sub>1</sub>-C<sub>4</sub> alkylsulfinyl; five-member or six-member fully saturated or partly unsaturated heterocycle group containing at least one hetero atom selected from the group consisting of O, S and N wherein available carbon or nitrogen represent the binding site of the group to the rest of the molecule either via direct bond or via C<sub>1</sub>-C<sub>4</sub> alkylene group and where said heterocycle can be optionally substituted with fluoro, chloro, C<sub>1</sub>-C<sub>4</sub> alkyl, cyano, nitro, hydroxy, C<sub>1</sub>-C<sub>4</sub> alkoxy, thiol, C<sub>1</sub>-C<sub>4</sub> alkylthio, amino, *N*-(C<sub>1</sub>-C<sub>4</sub>) alkylamino, *N,N*-di(C<sub>1</sub>-C<sub>4</sub>-alkyl)-amino, sulfonyl, C<sub>1</sub>-C<sub>4</sub> alkylsulfonyl, sulfinyl, C<sub>1</sub>-C<sub>4</sub> alkylsulfinyl; hydroxy; hydroxy-C<sub>2</sub>-C<sub>7</sub>-alkenyl; hydroxy-C<sub>2</sub>-C<sub>7</sub>-alkynyl; C<sub>1</sub>-C<sub>7</sub>-alkoxy; thiol; thio-C<sub>2</sub>-C<sub>7</sub>-alkenyl; thio-C<sub>2</sub>-C<sub>7</sub>-alkynyl; C<sub>1</sub>-C<sub>7</sub>-alkylthio; amino; *N*-(C<sub>1</sub>-C<sub>7</sub>-alkyl)amino; *N,N*-di(C<sub>1</sub>-C<sub>7</sub>-alkyl)amino; C<sub>1</sub>-C<sub>7</sub>-alkylamino; amino-C<sub>2</sub>-C<sub>7</sub>-alkenyl; amino-C<sub>2</sub>-C<sub>7</sub>-alkynyl; amino-C<sub>1</sub>-C<sub>7</sub>-alkoxy; C<sub>1</sub>-C<sub>7</sub>-alkanoyl; C<sub>7</sub>-C<sub>10</sub>-aroyl; oxo-C<sub>1</sub>-C<sub>7</sub>-alkyl; C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy; carboxy; an optionally substituted C<sub>1</sub>-C<sub>7</sub>-alkyloxycarbonyl; an optionally substituted C<sub>7</sub>-

C<sub>10</sub>-aryloxycarbonyl; carbamoyl; *N*-(C<sub>1</sub>-C<sub>7</sub>-alkyl)carbamoyl; *N,N*-di(C<sub>1</sub>-C<sub>7</sub>-alkyl)carbamoyl; cyano; cyano-C<sub>1</sub>-C<sub>7</sub>-alkyl; sulfonyl; C<sub>1</sub>-C<sub>7</sub>-alkylsulfonyl; sulfinyl; C<sub>1</sub>-C<sub>7</sub>-alkylsulfinyl; nitro;

or a substituent represented with the formula II:



## II

wherein

R<sup>2</sup> and R<sup>3</sup> simultaneously or independently from each other have the meaning of hydrogen, C<sub>1</sub>-C<sub>4</sub>-alkyl, aryl having the meaning as defined above or together with N have the meaning of optionally substituted heterocycle or heteroaryl wherein heterocycle relates to five-membered or six-membered fully saturated or partly unsaturated heterocycle group containing at least one hetero atom selected from the group consisting of O, S and N and where said heterocycle can be optionally substituted with one or two substituents which are selected from halogen, C<sub>1</sub>-C<sub>4</sub> alkyl, cyano, nitro, hydroxy, C<sub>1</sub>-C<sub>4</sub> alkoxy, thiol, C<sub>1</sub>-C<sub>4</sub> alkylthio, amino, *N*-(C<sub>1</sub>-C<sub>4</sub>) alkylamino, *N,N*-di(C<sub>1</sub>-C<sub>4</sub>-alkyl)-amino, sulfonyl, C<sub>1</sub>-C<sub>4</sub> alkylsulfonyl, sulfinyl, C<sub>1</sub>-C<sub>4</sub> alkylsulfinyl and heteroaryl relates to aromatic and partially aromatic groups of a monocyclic or bicyclic ring with 4 to 12 carbon atoms and at least one of them being heteroatom selected from the group consisting of O, S and N and where said heteroaryl can be optionally substituted with one or two substituents which are selected from halogen, C<sub>1</sub>-C<sub>4</sub> alkyl, cyano, nitro, hydroxy, C<sub>1</sub>-C<sub>4</sub> alkoxy, thiol, C<sub>1</sub>-C<sub>4</sub> alkylthio, amino, *N*-(C<sub>1</sub>-C<sub>4</sub>) alkylamino, *N,N*-di(C<sub>1</sub>-C<sub>4</sub>-alkyl)-amino, sulfonyl, C<sub>1</sub>-C<sub>4</sub> alkylsulfonyl, sulfinyl, C<sub>1</sub>-C<sub>4</sub> alkylsulfinyl;

m has the meaning of an integer from 1 to 3;

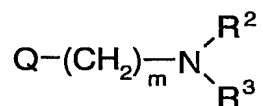
Q has the meaning of oxygen, sulfur or nitrogen;

and pharmaceutically acceptable salts and solvates thereof.

2. A compound according to claim 1 wherein X represents O or S.
3. A compound according to claim 1 wherein Y and Z independently from each other mean one or more identical or different substituents linked to any available carbon atom selected from the group consisting of hydrogen, fluorine, chlorine, bromine, C<sub>1</sub>-C<sub>4</sub>-alkyl, halo-C<sub>1</sub>-C<sub>4</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>4</sub>-alkoxy, trifluoromethoxy, C<sub>1</sub>-C<sub>4</sub>-alkanoyl, amino, amino-C<sub>1</sub>-C<sub>4</sub>-alkyl, N-(C<sub>1</sub>-C<sub>4</sub>-alkyl)amino, N,N-di(C<sub>1</sub>-C<sub>4</sub>-alkyl)amino, thiol, C<sub>1</sub>-C<sub>4</sub>-alkylthio, cyano and nitro.
4. A compound according to claim 1 wherein R<sup>1</sup> has the meaning of hydrogen, halogen, C<sub>1</sub>-C<sub>7</sub>-alkyl optionally substituted with one, two, three or more substituents selected from the group consisting of halogen atom, hydroxy, C<sub>1</sub>-C<sub>4</sub> alkoxy, thiol, C<sub>1</sub>-C<sub>4</sub> alkylthio, amino, N-(C<sub>1</sub>-C<sub>4</sub>) alkylamino and N,N-di(C<sub>1</sub>-C<sub>4</sub>-alkyl)-amino; monocyclic or bicyclic aryl group having from 6 to 10 carbon atoms and altering double bond and said group can be optionally substituted with one or two substituents selected from the group consisting of fluoro, chloro, C<sub>1</sub>-C<sub>4</sub> alkyl, cyano, nitro, hydroxy, C<sub>1</sub>-C<sub>4</sub> alkoxy, thiol, C<sub>1</sub>-C<sub>4</sub> alkylthio, amino, N-(C<sub>1</sub>-C<sub>4</sub>) alkylamino and N,N-di(C<sub>1</sub>-C<sub>4</sub>-alkyl)-amino and can be linked to the rest of the molecule by any available carbon atom via direct bond or via C<sub>1</sub>-C<sub>4</sub> alkylene group; monocyclic or bicyclic heteroaryl having the meaning of aromatic and partially aromatic groups of a monocyclic or bicyclic ring with 4 to 12 carbon atoms and at least one of them being heteroatom selected from the group consisting of O, S and N wherein available carbon or nitrogen represent the binding site of the group to the rest of the molecule either via direct bond or via C<sub>1</sub>-C<sub>4</sub> alkylene group and where said heteroaryl can be optionally substituted with fluoro, chloro, C<sub>1</sub>-C<sub>4</sub> alkyl, cyano, nitro, hydroxy, C<sub>1</sub>-C<sub>4</sub> alkoxy, thiol, C<sub>1</sub>-C<sub>4</sub> alkylthio, amino, N-(C<sub>1</sub>-C<sub>4</sub>) alkylamino and N,N-di(C<sub>1</sub>-C<sub>4</sub>-alkyl)-amino; five-member or six-member fully saturated or partly unsaturated heterocycle group

containing at least one hetero atom selected from the group consisting of O, S and N wherein available carbon or nitrogen represent the binding site of the group to the rest of the molecule either via direct bond or via C<sub>1</sub>-C<sub>4</sub> alkylene group and where said heterocycle can be optionally substituted with fluoro, chloro, C<sub>1</sub>-C<sub>4</sub> alkyl, cyano, nitro, hydroxy, C<sub>1</sub>-C<sub>4</sub> alkoxy, thiol, C<sub>1</sub>-C<sub>4</sub> alkylthio, amino, *N*-(C<sub>1</sub>-C<sub>4</sub>) alkylamino and *N,N*-di(C<sub>1</sub>-C<sub>4</sub>-alkyl)-amino; hydroxy; C<sub>1</sub>-C<sub>7</sub>-alkoxy; thiol; C<sub>1</sub>-C<sub>7</sub>-alkylthio; amino; *N*-(C<sub>1</sub>-C<sub>7</sub>-alkyl)amino; *N,N*-di(C<sub>1</sub>-C<sub>7</sub>-alkyl)amino; amino-C<sub>1</sub>-C<sub>7</sub>-alkoxy; C<sub>1</sub>-C<sub>7</sub>-alkanoyl; C<sub>7</sub>-C<sub>10</sub>-aroyl; C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy; an optionally substituted C<sub>1</sub>-C<sub>7</sub>-alkyloxycarbonyl; an optionally substituted C<sub>7</sub>-C<sub>10</sub>-aryloxycarbonyl; carbamoyl; *N*-(C<sub>1</sub>-C<sub>7</sub>-alkyl)carbamoyl; *N,N*-di(C<sub>1</sub>-C<sub>7</sub>-alkyl)carbamoyl; cyano; cyano-C<sub>1</sub>-C<sub>7</sub>-alkyl; nitro;

or a substituent represented with the formula II:



## II

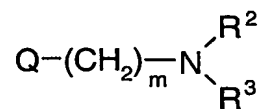
wherein

R<sup>2</sup> and R<sup>3</sup> simultaneously or independently from each other have the meaning of hydrogen, C<sub>1</sub>-C<sub>4</sub>-alkyl, aryl having the meaning as described above; or together with N have the meaning of heterocycle or heteroaryl selected from the group consisting of morpholine-4-yl, piperidine-1-yl, pyrrolidine-1-yl, imidazole-1-yl and piperazine-1-yl;

m has the meaning of an integer from 1 to 3;

Q has the meaning of oxygen.

5. A compound according to claims 1 or 3 wherein Y represents hydrogen or chlorine and Z represents hydrogen.
6. A compound according to claims 1 or 4 wherein R<sup>1</sup> represents CH<sub>3</sub>, CH<sub>2</sub>Br, CH<sub>2</sub>OH or a substituent of formula II:

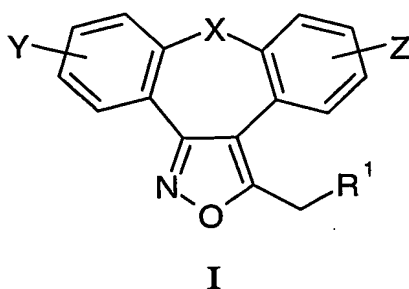


## II

wherein  $R^2$ ,  $R^3$ , Q and m have the above defined meaning.

7. A compound according to claim 6 wherein symbol m has the meaning of 2 or 3.
8. A compound according to claim 1 selected from the group consisting of:
  - 3-methyl-2-oxa-8-thia-1-aza-dibenzo[*e,h*]azulene;
  - 11-chloro-3-methyl-2-oxa-8-thia-1-aza-dibenzo[*e,h*]azulene;
  - 3-methyl-2,8-dioxa-1-aza-dibenzo[*e,h*]azulene;
  - 3-bromomethyl-2-oxa-8-thia-1-aza-dibenzo[*e,h*]azulene;
  - 3-bromomethyl-11-chloro-2-oxa-8-thia-1-aza-dibenzo[*e,h*]azulene;
  - 3-bromomethyl-2,8-dioxa-1-aza-dibenzo[*e,h*]azulene;
  - dimethyl-[2-(2-oxa-8-thia-1-aza-dibenzo[*e,h*]azulen-3-ylmethoxy)-ethyl]-amine;
  - dimethyl-[3-(2-oxa-8-thia-1-aza-dibenzo[*e,h*]azulen-3-ylmethoxy)-propyl]-amine;
  - dimethyl-[2-(11-chloro-2-oxa-8-thia-1-aza-dibenzo[*e,h*]azulen-3-ylmethoxy)-ethyl]-amine;
  - dimethyl-[3-(11-chloro-2-oxa-8-thia-1-aza-dibenzo[*e,h*]azulen-3-ylmethoxy)-propyl]-amine;
  - dimethyl-[2-(2,8-dioxa-1-aza-dibenzo[*e,h*]azulen-3-ylmethoxy)-ethyl]-amine; and
  - dimethyl-[3-(2,8-dioxa-1-aza-dibenzo[*e,h*]azulen-3-ylmethoxy)-propyl]-amine.
9. Process for the preparation of the compound of the formula I:

49



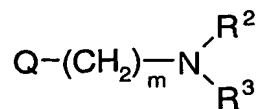
wherein

X means CH<sub>2</sub> or a heteroatom selected from the group consisting of O, S, S(=O), S(=O)<sub>2</sub> and NR<sup>a</sup>, wherein R<sup>a</sup> is hydrogen or a substituent selected from the group consisting of C<sub>1</sub>-C<sub>3</sub>-alkyl, C<sub>1</sub>-C<sub>3</sub>-alkanoyl, C<sub>1</sub>-C<sub>7</sub>-alkoxycarbonyl, C<sub>7</sub>-C<sub>10</sub>-arylalkyloxycarbonyl, C<sub>7</sub>-C<sub>10</sub>-aroyl, C<sub>7</sub>-C<sub>10</sub>-arylalkyl, C<sub>3</sub>-C<sub>7</sub>-alkylsilyl and C<sub>5</sub>-C<sub>10</sub>-alkylsilylalkyloxyalkyl;

Y and Z independently from each other mean one or more identical or different substituents linked to any available carbon atom selected from the group consisting of hydrogen, halogen, C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>2</sub>-C<sub>4</sub>-alkenyl, C<sub>2</sub>-C<sub>4</sub>-alkinyl, halo-C<sub>1</sub>-C<sub>4</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>4</sub>-alkoxy, trifluoromethoxy, C<sub>1</sub>-C<sub>4</sub>-alkanoyl, amino, amino-C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-alkylamino, N-(C<sub>1</sub>-C<sub>4</sub>-alkyl)amino, N,N-di(C<sub>1</sub>-C<sub>4</sub>-alkyl)amino, thiol, C<sub>1</sub>-C<sub>4</sub>-alkylthio, sulfonyl, C<sub>1</sub>-C<sub>4</sub>-alkylsulfonyl, sulfinyl, C<sub>1</sub>-C<sub>4</sub>-alkylsulfinyl, carboxy, C<sub>1</sub>-C<sub>4</sub>-alkoxycarbonyl, cyano and nitro;

R<sup>1</sup> means hydrogen, halogen, optionally substituted C<sub>1</sub>-C<sub>7</sub>-alkyl optionally substituted with one, two, three or more substituents selected from the group consisting of halogen atom, hydroxy, C<sub>1</sub>-C<sub>4</sub> alkoxy, thiol, C<sub>1</sub>-C<sub>4</sub> alkylthio, amino, N-(C<sub>1</sub>-C<sub>4</sub>) alkylamino, N,N-di(C<sub>1</sub>-C<sub>4</sub>-alkyl)-amino, sulfonyl, C<sub>1</sub>-C<sub>4</sub> alkylsulfonyl, sulfinyl and C<sub>1</sub>-C<sub>4</sub> alkylsulfinyl; C<sub>2</sub>-C<sub>7</sub>-alkenyl optionally substituted with one, two, three or more halogen atoms; C<sub>2</sub>-C<sub>7</sub>-alkinyl; monocyclic or bicyclic aryl group having from 6 to 10 carbon atoms and altering double bond and said group can be optionally substituted with one or two substituents selected from the group consisting of fluoro, chloro, C<sub>1</sub>-C<sub>4</sub> alkyl, cyano, nitro, hydroxy, C<sub>1</sub>-C<sub>4</sub> alkoxy, thiol, C<sub>1</sub>-C<sub>4</sub> alkylthio, amino, N-

(C<sub>1</sub>-C<sub>4</sub>) alkylamino, *N,N*-di(C<sub>1</sub>-C<sub>4</sub>-alkyl)-amino, sulfonyl, C<sub>1</sub>-C<sub>4</sub> alkylsulfonyl, sulfinyl, C<sub>1</sub>-C<sub>4</sub> alkylsulfinyl and can be linked to the rest of the molecule by any available carbon atom via direct bond or via C<sub>1</sub>-C<sub>4</sub> alkylene group; monocyclic or bicyclic heteroaryl having the meaning of aromatic and partially aromatic groups of a monocyclic or bicyclic ring with 4 to 12 carbon atoms and at least one of them being heteroatom selected from the group consisting of O, S and N wherein available carbon or nitrogen represent the binding site of the group to the rest of the molecule either via direct bond or via C<sub>1</sub>-C<sub>4</sub> alkylene group and where said heteroaryl can be optionally substituted with fluoro, chloro, C<sub>1</sub>-C<sub>4</sub> alkyl, cyano, nitro, hydroxy, C<sub>1</sub>-C<sub>4</sub> alkoxy, thiol, C<sub>1</sub>-C<sub>4</sub> alkylthio, amino, *N*-(C<sub>1</sub>-C<sub>4</sub>) alkylamino, *N,N*-di(C<sub>1</sub>-C<sub>4</sub>-alkyl)-amino, sulfonyl, C<sub>1</sub>-C<sub>4</sub> alkylsulfonyl, sulfinyl, C<sub>1</sub>-C<sub>4</sub> alkylsulfinyl; five-member or six-member fully saturated or partly unsaturated heterocycle group containing at least one hetero atom selected from the group consisting of O, S and N wherein available carbon or nitrogen represent the binding site of the group to the rest of the molecule either via direct bond or via C<sub>1</sub>-C<sub>4</sub> alkylene group and where said heterocycle can be optionally substituted with fluoro, chloro, C<sub>1</sub>-C<sub>4</sub> alkyl, cyano, nitro, hydroxy, C<sub>1</sub>-C<sub>4</sub> alkoxy, thiol, C<sub>1</sub>-C<sub>4</sub> alkylthio, amino, *N*-(C<sub>1</sub>-C<sub>4</sub>) alkylamino, *N,N*-di(C<sub>1</sub>-C<sub>4</sub>-alkyl)-amino, sulfonyl, C<sub>1</sub>-C<sub>4</sub> alkylsulfonyl, sulfinyl, C<sub>1</sub>-C<sub>4</sub> alkylsulfinyl; hydroxy; hydroxy-C<sub>2</sub>-C<sub>7</sub>-alkenyl; hydroxy-C<sub>2</sub>-C<sub>7</sub>-alkinyl; C<sub>1</sub>-C<sub>7</sub>-alkoxy; thiol; thio-C<sub>2</sub>-C<sub>7</sub>-alkenyl; thio-C<sub>2</sub>-C<sub>7</sub>-alkinyl; C<sub>1</sub>-C<sub>7</sub>-alkylthio; amino; *N*-(C<sub>1</sub>-C<sub>7</sub>-alkyl)amino; *N,N*-di(C<sub>1</sub>-C<sub>7</sub>-alkyl)amino; C<sub>1</sub>-C<sub>7</sub>-alkylamino; amino-C<sub>2</sub>-C<sub>7</sub>-alkenyl; amino-C<sub>2</sub>-C<sub>7</sub>-alkinyl; amino-C<sub>1</sub>-C<sub>7</sub>-alkoxy; C<sub>1</sub>-C<sub>7</sub>-alkanoyl; C<sub>7</sub>-C<sub>10</sub>-aroyl; oxo-C<sub>1</sub>-C<sub>7</sub>-alkyl; C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy; carboxy; an optionally substituted C<sub>1</sub>-C<sub>7</sub>-alkyloxycarbonyl; an optionally substituted C<sub>7</sub>-C<sub>10</sub>-aryloxycarbonyl; carbamoyl; *N*-(C<sub>1</sub>-C<sub>7</sub>-alkyl)carbamoyl; *N,N*-di(C<sub>1</sub>-C<sub>7</sub>-alkyl)carbamoyl; cyano; cyano-C<sub>1</sub>-C<sub>7</sub>-alkyl; sulfonyl; C<sub>1</sub>-C<sub>7</sub>-alkylsulfonyl; sulfinyl; C<sub>1</sub>-C<sub>7</sub>-alkylsulfinyl; nitro; or a substituent represented with the formula **II**:



## II

wherein

$R^2$  and  $R^3$  simultaneously or independently from each other have the meaning of hydrogen,  $C_1$ - $C_4$ -alkyl, aryl having the meaning as defined above, or together with N have the meaning of optionally substituted heterocycle or heteroaryl wherein heterocycle relates to five-member or six-member fully saturated or partly unsaturated heterocycle group containing at least one hetero atom selected from the group consisting of O, S and N and where said heterocycle can be optionally substituted with one or two substituents which are selected from halogen,  $C_1$ - $C_4$  alkyl, cyano, nitro, hydroxy,  $C_1$ - $C_4$  alkoxy, thiol,  $C_1$ - $C_4$  alkylthio, amino,  $N$ -( $C_1$ - $C_4$ ) alkylamino,  $N,N$ -di( $C_1$ - $C_4$ -alkyl)-amino, sulfonyl,  $C_1$ - $C_4$  alkylsulfonyl, sulfinyl,  $C_1$ - $C_4$  alkylsulfinyl; and wherein heteroaryl relates to aromatic and partially aromatic groups of a monocyclic or bicyclic ring with 4 to 12 carbon atoms and at least one of them being heteroatom selected from the group consisting of O, S and N and where said heteroaryl can be optionally substituted with one or two substituents which are selected from halogen,  $C_1$ - $C_4$  alkyl, cyano, nitro, hydroxy,  $C_1$ - $C_4$  alkoxy, thiol,  $C_1$ - $C_4$  alkylthio, amino,  $N$ -( $C_1$ - $C_4$ ) alkylamino,  $N,N$ -di( $C_1$ - $C_4$ -alkyl)-amino, sulfonyl,  $C_1$ - $C_4$  alkylsulfonyl, sulfinyl,  $C_1$ - $C_4$  alkylsulfinyl;

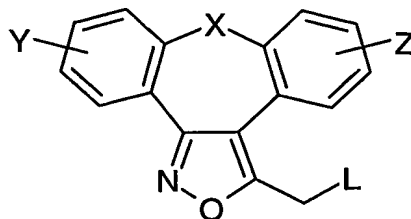
$m$  has the meaning of an integer from 1 to 3 and

$Q$  has the meaning of oxygen, sulfur or nitrogen;

and its pharmacologically acceptable salts and solvates,

which comprises:

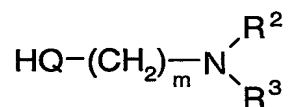
a) condensation of a compound **Ia**:



**Ia**

wherein symbols X, Y and Z have the meaning as defined above, L has the meaning of a leaving group,

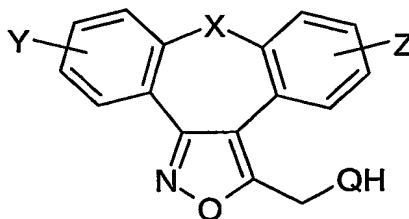
with an optionally selected alcohol, thioalcohol or amine or with a compound of the formula **IIa**:



**IIa**

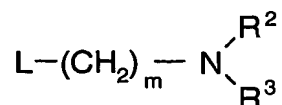
wherein all radicals and symbols have earlier stated meanings;

b) condensation of a compound of the formula **Ib**:



**Ib**

wherein all symbols have the earlier stated meanings, with a compound of the formula **IIb**:

**IIb**

wherein the radicals  $\text{R}^2$  and  $\text{R}^3$  and the symbol  $m$  have the earlier stated meanings and symbol  $\text{L}$  has the meaning of a suitable leaving group.

10. A pharmaceutical composition comprising at least one compound according to claim 1 and pharmaceutically acceptable salt or solvate thereof in association with a pharmaceutically acceptable excipient diluent and/or carrier.

11. Use of a compound according to claim 1 for the manufacture of a pharmaceutical formulations for the treatment and prevention of diseases, damages and disorders of the central nervous system caused by disorders of neurochemical equilibrium of biogenic amines or other neurotransmitters

12. Use according to claim 11, wherein the selected biogenic amines are serotonin, norepinephrine and dopamine.

13. Use according to claim 11, wherein neurotransmitter is glutamate.

14. Use according to claims 11, 12 or 13 wherein the compounds of the general formula I act upon the neurochemical equilibrium by regulating the synthesis, storing, releasing, metabolizing and/or reabsorption of biogenic amines or neurotransmitters and binding to their receptors.

15. Use according to claim 14, wherein the compounds of the general formula I show binding affinity to a receptor of one or more biogenic amines.

16. Use according to claim 15, wherein the compounds of the general formula I show a significant binding affinity to serotonin 5-HT<sub>2A</sub> and 5-HT<sub>2C</sub> receptors.
17. Use according to claim 16, wherein the compounds of the general formula I show binding affinity to selected serotonin receptors in a concentration of IC<sub>50</sub><1μM.
18. Use according to claim 11, wherein the compounds of the general formula I act as σ1 receptor ligands in a concentration of IC<sub>50</sub><1μM by modulating central neurotransmitter system.
19. Use according to claims 11, 16 or 18, wherein the compounds of the general formula I show dual binding affinity to σ1 receptor and to at least one serotonin receptor selected from 5-HT<sub>2A</sub> and 5-HT<sub>2C</sub>.
20. Use according to claim 11, wherein the diseases and disorders of the central nervous system are selected from the group consisting of anxiety, depression and modest depression, bipolar disorders, sleeping disorders, sexual disorders, psychosis, borderline psychosis, schizophrenia, migraine, personality disorders and obsessive-compulsive disorders, social phobia or panic attacks, organic mental disorders in children, aggression, memory disorders and personality disorders in elderly people, addiction, obesity, bulimia and similar disorders, snoring, premenstrual troubles.
21. Use according to claim 11, wherein the damages of the central nervous system are caused by trauma, brain stroke, neurodegenerative diseases, cardiovascular disorders such as high blood pressure, thrombosis, infarct as well as by gastrointestinal disorders.

22. Use according to claim 11, wherein the compounds of the general formula I, pharmaceutically acceptable salts and solvates thereof are selected from the group consisting of:

3-methyl-2-oxa-8-thia-1-aza-dibenzo[*e,h*]azulene;  
11-chloro-3-methyl-2-oxa-8-thia-1-aza-dibenzo[*e,h*]azulene;  
3-methyl-2,8-dioxa-1-aza-dibenzo[*e,h*]azulene;  
3-bromomethyl-2-oxa-8-thia-1-aza-dibenzo[*e,h*]azulene;  
3-bromomethyl-11-chloro-2-oxa-8-thia-1-aza-dibenzo[*e,h*]azulene;  
3-bromomethyl-2,8-dioxa-1-aza-dibenzo[*e,h*]azulene;  
dimethyl-[2-(2-oxa-8-thia-1-aza-dibenzo[*e,h*]azulen-3-ylmethoxy)-ethyl]-amine;  
dimethyl-[3-(2-oxa-8-thia-1-aza-dibenzo[*e,h*]azulen-3-ylmethoxy)-propyl]-amine;  
dimethyl-[2-(11-chloro-2-oxa-8-thia-1-aza-dibenzo[*e,h*]azulen-3-ylmethoxy)-ethyl]-amine;  
dimethyl-[3-(11-chloro-2-oxa-8-thia-1-aza-dibenzo[*e,h*]azulen-3-ylmethoxy)-propyl]-amine;  
dimethyl-[2-(2,8-dioxa-1-aza-dibenzo[*e,h*]azulen-3-ylmethoxy)-ethyl]-amine; and  
dimethyl-[3-(2,8-dioxa-1-aza-dibenzo[*e,h*]azulen-3-ylmethoxy)-propyl]-amine.